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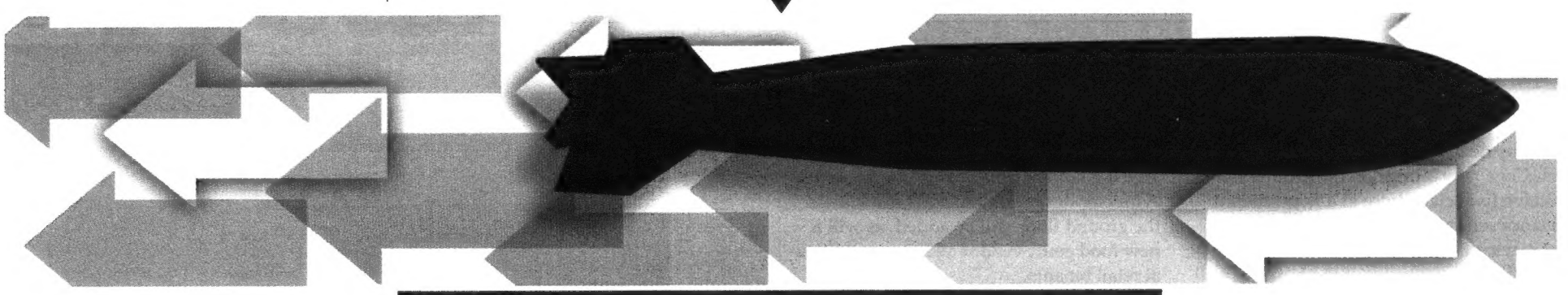

UNIVERSITY OF ALBERTA

folio

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Medical researchers celebrate $16 million in grants

CIHR projects cover everything from research to implementation

By **Ryan Smith**

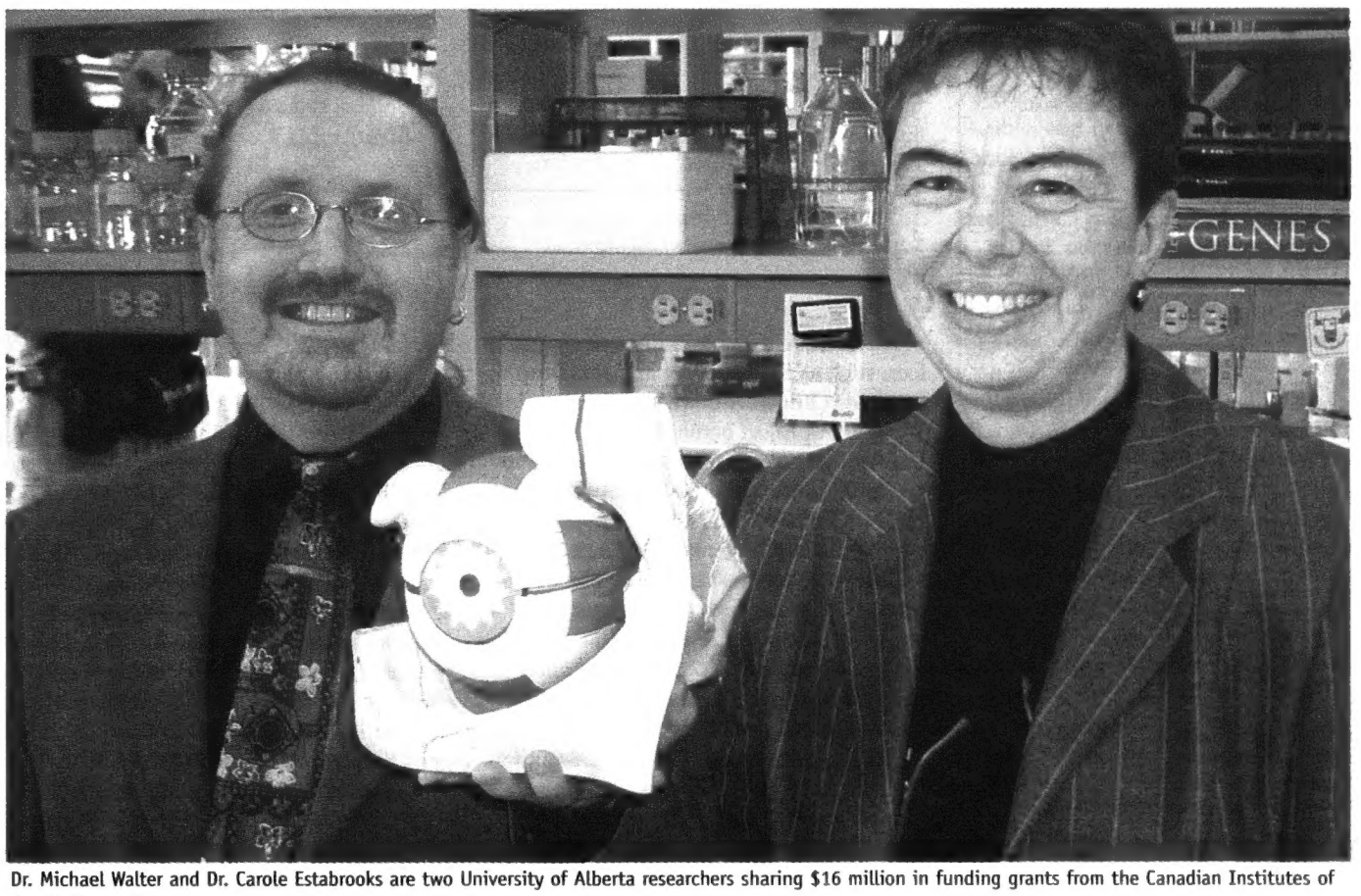
A day after receiving nearly $12 million in funding for the indirect costs of their work, researchers at the University of Alberta are cheering again. Thirty-eight medical research projects at the U of A will receive a total of nearly $16 million in funding through the federal government's Canadian Institutes of Health Research (CIHR). The funding is a part of an $180 million investment for medical research projects across the country.

> "Glaucoma is one of the leading causes of blindness, and 50 per cent of cases are believed to be inherited. All too often glaucoma goes undiagnosed until it's too late, and that's what we hope to prevent."
>
> – Dr. Michael Walter

A host of federal and university dignitaries, including Minister of Health Anne McLellan and CIHR President Dr. Alan Bernstein, made the announcement in Dr. Michael Walter's research laboratory on campus. Walter, a U of A ophthalmology professor, will receive $320,000 for his research to identify and characterize genes involved in glaucoma.

"Glaucoma is one of the leading causes of blindness, and 50 per cent of cases are believed to be inherited," Walter said. "All too often glaucoma goes undiagnosed until it's too late, and that's what we hope to prevent."

Since 1993, Walter and his colleagues have made "tremendous advances" in the study of the causes of glaucoma, but all the questions have not yet been answered. "We have identified some genes that cause glaucoma, but now we need to find out how those genes cause the disease. When and if we find that out, we hope to develop therapies," he said.



Dr. Michael Walter and Dr. Carole Estabrooks are two University of Alberta researchers sharing $16 million in funding grants from the Canadian Institutes of Health Research.

U of A nursing professor Dr. Carole Estabrooks is the principal investigator of an interdisciplinary project that will receive $1.9 million from the CIHR. Estabrooks' project is a five-year examination to improve and accelerate the transfer of knowledge gained by research into practical improvements and cost-saving measures to our health care system.

"Right now there is a 15 to 20 year gap in the translation of knowledge from the laboratories into practice by health care professionals. We hope to shorten that gap," Estabrooks said.

Estabrooks cited her own studies on the use of pain medication as an example of a lag between research results and practice. "Studies show there is about a one-per-cent risk that patients will become addicted to opiates if they are given any; however, we've found lots of health professional feel anxiety and are still reluctant to administer the drugs to help patients in pain," Estabrooks said.

Estabrooks, whose research team includes U of A business professor Karen Golden-Biddle and sociologists and political scientists from the University of Saskatchewan and Laval University, believes Walter's research of glaucoma is a good example of "how created knowledge needs to be used."

"Sixty-five million people in the world suffer from glaucoma," Walter added. "This disease happens with the same frequency as heart disease, so I think it's an important disease to study...The CIHR funding is critical for us to continue our research."

"The University of Alberta is proud of the outstanding performance of its health researchers," said Dr. Gary Kachanoski, vice-president (research) at the U of A. "The expanded mandate of CIHR, and significant new investment by the federal government, have led to unprecedented growth in research activity, the impact of which will benefit so many aspects of Canadian society." ■

Campus building boom to forge ahead

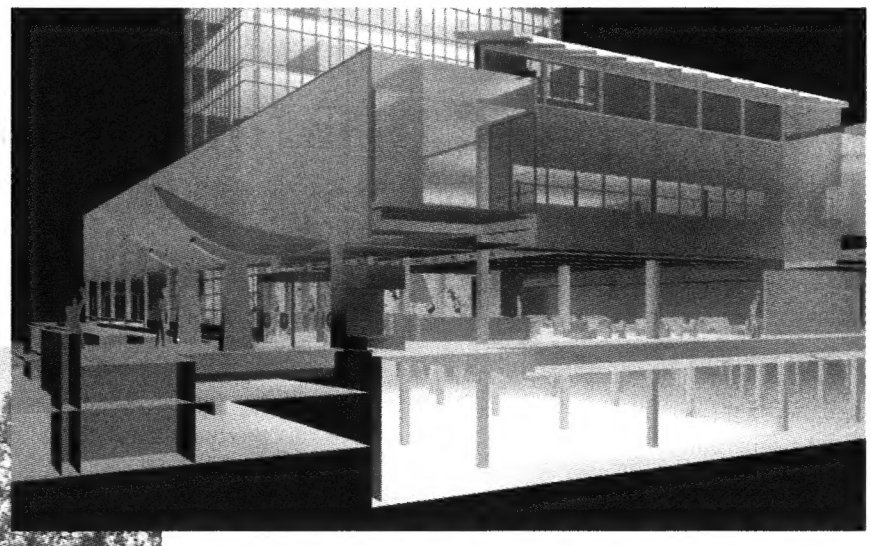
SUB expansion is just the beginning

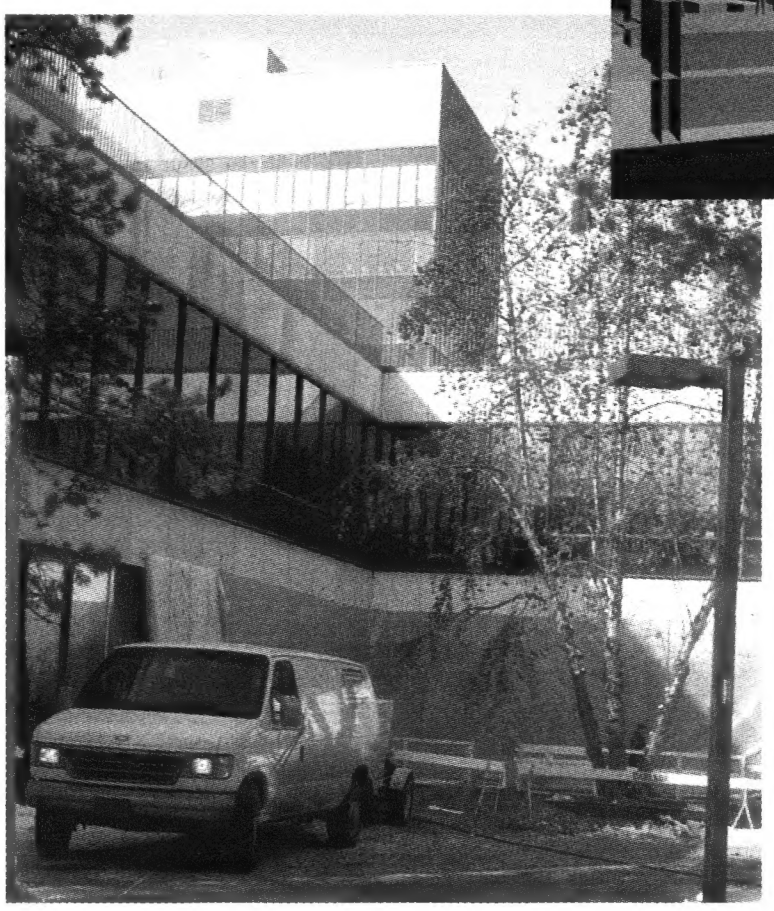
By **Geoff McMaster**

As a sign of things to come across campus over the next few years, the Students' Union Building is getting a major facelift this summer. And if all goes well, by next fall students will be able to relax in a new lounge on the ground floor, receive financial advice at a new student finance centre, and enjoy a host of expanded services.

While the footprint of the building will not change during construction—amounting to about $4.7 million—the overhangs at the south and west sides will be brought inside, says SU President Chris Samuel, increasing floor space by about 20,000 square feet. The ground level extension into the courtyard between SUB and the Van Vliet Centre will become a student relaxation centre.

"We're quite exited about this because we're going to be putting in a large-screen television, adding some more chairs to give it a homey, upbeat feel," said Samuel. A quieter lounge on the northeast side of the ground floor will be added, as will a new food court vendor and some additional retail tenants.





Work on renovations and expansion of the Students' Union Building is just the beginning of a construction boom on campus.

The second floor will be extended to provide more space for student services, which are now "bursting at their seams," Samuel said. The new space will include a computer lab for general student use and a new consolidated student financial centre on the west side "which will help students with all aspects of their finances when they want to process student loans, or have questions about awards or scholarships."

On the northeast courtyard, where construction has already begun, there will be a new stairwell—the existing one next to the food court will be taken down to accommodate the new design. Some services, such as the Gateway and the Dean of Students Office, will move into the tower.

A joint project between the SU and university, the expansion will draw about $3.5 million from the SU and about $1.7 from university coffers. It is expected to be completed by November of 2002.

The SUB expansion is only one of a number of changes to the campus landscape currently underway. With enrolment expected to grow to 37,000 from 32,000 over the next decade, and with annual research funding expected to increase to $500 million from the current $255 million, the university needs to add 40 per cent more academic and research space. To help meet that need, construction will forge ahead, to the tune of about $450 million over the next four years.

Perhaps most urgent is the "crying need" for student accommodation, says Associate Vice-President (Academic) Art Quinney, and so the university is moving quickly to build a new undergraduate residence linked to the Lister Complex. It will accommodate about 400 students in one-bedroom units and will open, if all goes well, in the fall of 2003. Another residence of about the same size is planned for international students.

Some of the other major projects underway are:

- **Health Research Innovation Facility.** A research facility for the health sciences focusing on innovation and the concept of "bench to bedside research," the plan calls for 52,000 square metres of space, comprising two building additions on either side of the Heritage Medical Research Centre and adjacent to the Medical Sciences Building. It will house the ground-breaking research of the renowned islet-cell transplantation team (which will be temporarily housed in College Plaza).
- **The Natural Resources Engineering Facility.** To be located immediately south of the Electrical and Computer Engineering Research Facility and the Engineering Teaching and Learning Centre, this will be the final component in the engineering faculty's research sector. Covering about 34,000 square metres, it will consolidate the Department of Civil Engineering into one location from about 10 others on campus. The facility is meant to foster inter-disciplinary and collaborative research.
- **Interdisciplinary Science Building.** This building will house the expanded research needs of the Faculty of Science. The 40,000 square-metre facility will accommodate five interdisciplinary research groups in the science sector of campus. They include resource geosciences, integrated landscape management, chemical biology and proteomics, nano-structures and new materials and geophysical fluid dynamics.
- **The National Institute for Nanotechnology (NINT).** Established by the National Research Council of Canada, in partnership with the university and the province, this institute will house research expected to be the next major field of human endeavor, involving activities in engineering, medicine, biology, physics, chemistry, computing science and other areas. While planning has just begun, the building is likely to be about 17,000 square metres and house a minimum of $40 million in specialized equipment. NINT will be temporarily housed in the new Electrical and Computer Engineering Research Facility.
- **Health Sciences Learning Centre.** Proposed as a joint venture between the university and Capital Health Authority, the centre will be a mixed-use facility concentrating on two areas: instruction and training for the health sciences and outpatient ambulatory clinics which will cover most specialties in medicine, surgery, family medicine and pediatrics. It is expected to cover between 140,000 and 150,000 square metres on the current site of the Research Transition Facility along 114 St., west of the Walter Mackenzie Centre.
- **Saville Centre.** This will be the new consolidated facility for three physical education and recreation activity centres: curling, tennis and gymnastics. It will be located at the existing Balmoral Curling Club with an addition on the east side of the building. Tennis will move from Michener Park, and gymnastics will move from the Research Transition Facility on the north campus. Construction will begin this summer with completion scheduled for the fall.
- **Heart and Stroke Research Centre.** Planned as a world-class research centre aimed at the prevention and cure of cardiovascular disease, this will be a 1,000-square-metre human imaging and vascular biology research facility. It will be located in the basement of the recently completed emergency wing of the Walter C. Mackenzie Health Sciences Centre.

"Our highest priority and the one that is key to us is the Health Research Innovation Facility," said Quinney. "It's been our number-one priority for a long period of time, followed closely by the Natural Resources Engineering Facility and the Interdisciplinary Science Building."

In order to provide power to all of these facilities, the university will also add a new boiler, he says. There are also plans for increased parking capacity. "As we take up parking lots to build buildings, we have to at least maintain our current ratio of parking, so we are looking at some expansion to Windsor Car Park" as well as a parking structure for the Health Sciences Learning Centre.

In addition to these capital projects, $2.2 million has been designated out of the operating budget for deferred maintenance each year over the next four years and $1.5 million has been earmarked for classroom enhancements. A Celebration Plaza in front of the administration building, with benches and pillars carrying the names of donors to the last fundraising campaign is also scheduled for completion in June.

"The University of Alberta is one of the province's greatest success stories," said Provost and Vice-President (Academic) Doug Owram. Referring to weakened world money markets and provincial funding shortfalls, he added: "The University of Alberta continues to grow, and we can't allow a short-term downturn to interfere with more than 90 years of success and growth." ■

folio

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UNIVERSITY OF ALBERTA

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A farewell to disarmament

A frank, straightforward and disturbing document puts the brakes on disarmament

By **Richard Cairney**

It wasn't supposed to happen. The Cold War drew to a close and old enemies forged new, if tenuous, alliances. The world's superpowers put the safety catch on their nuclear arsenals, stopped pointing missiles at each other and began to disarm. And yet, suddenly, even amidst boasts of nuclear cutbacks, the United States is engaging in nuclear sabre-rattling, considering the development of a new generation of nukes, openly discussing first-strike scenarios and listing possible targets.

In mid-March, a classified U.S. Defence Department report—a nuclear posture review—was leaked to the *New York Times* and the *Los Angeles Times* newspapers. The document's frank tenor and blunt discussion of waging nuclear war against other superpowers, like China, and non-nuclear nations, such as Iraq, has once again brought the spectre of nuclear holocaust to the public's attention.

The nuclear posture review made it plain the U. S. military had been asked to draft plans for using nuclear weapons against seven nations: Russia, China, North Korea, Iran, Iraq, Libya and Syria. The report also outlined circumstances in which nuclear weapons might be used: in attacks on targets able to withstand conventional attacks; in response to a first-strike nuclear, biological or chemical weapons attack against the U.S.; and "in the event of surprising military developments." The report suggested the use of nuclear weapons could follow a military confrontation between China and Taiwan where tensions are high.

Besides naming names, the document also makes a case for developing new nuclear weapons that would serve as a deterrent to stockpiling weapons of mass destruction and to terrorist organizations that gain nuclear capabilities. Fearing that terrorists could launch a nuclear attack using small, so-called "suitcase" devices, the document also suggests developing similar weapons—less powerful than existing nuclear weapons but powerful and accurate enough to deter or retaliate against the use of such weapons. It also suggests the development of nuclear-powered, bunker-buster style bombs capable of penetrating fortified bunkers to strike stockpiled weaponry.

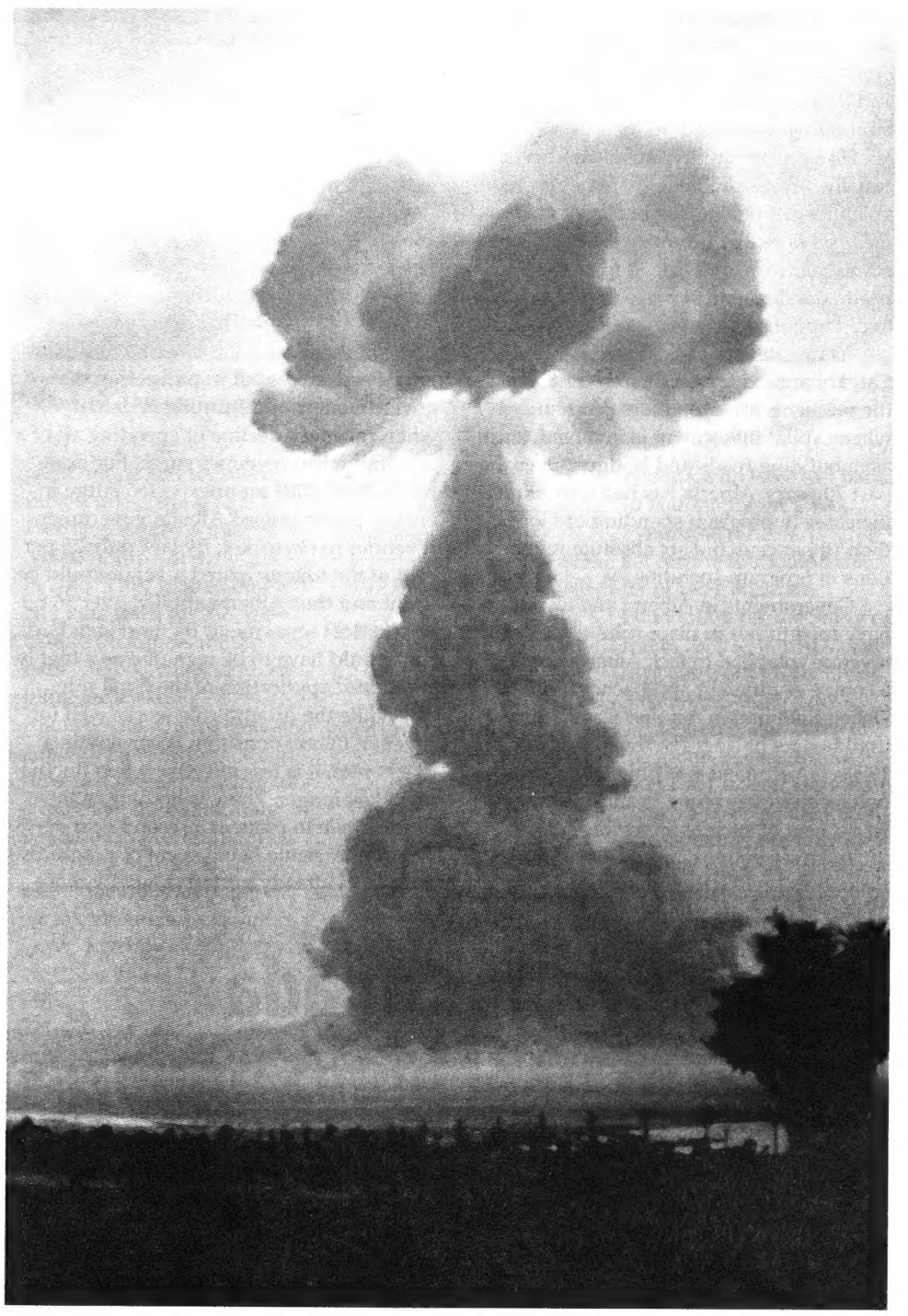
Predictably, reaction was swift and harsh. In the wake of the Sept. 11 attacks on the U.S. and the ensuing war against terror in Afghanistan, critics said the document was especially alarming.

But Dr. Leslie Green, a retired U of A political science professor who has served as an advisor on terrorism to western nations and local police agencies, says contents of the nuclear posture review are old news. Only the context provided by the media gives it a fresh spin.

"This is nothing new," Green said of the document. "That's the trouble with the media—everything is being related back to September 11, even if it isn't related to it. You can't connect nuclear weapons in North Korea to September 11."

The American explanation that it's constantly reviewing its nuclear capabilities is as straightforward a reply as anyone should expect, he adds.

"What they are saying is, 'We've always been discussing possibilities of facing this or that scenario, in which we might have to respond in this or that fashion.' The Americans are simply saying that they are prepared to consider all sorts of possibilities."



"They are trying to design weapons that will bridge the gap between conventional weapons and the more destructive weapons. In doing so, they are trying to create weapons that are more useable, and hence more likely to be used. That raises concerns."

– Dr. Tom Keating

But Dr. Andy Knight, a political science professor and editor of the international journal, Global Governance, says the leaked report betrays a new aggressive pose struck by the U.S. military. The result, he predicts, will be a renewed escalation of the arms race that will undermine progress made during the past decade.

"This is a tremendous change in American posturing," he said. "If you look at the post-Cold War period and the emphasis Americans put on trying to reduce nuclear weapons— and not just among those who are members of the nuclear club, but to limit proliferation of nuclear weapons in general—you have to look at this as a departure. The Americans are now going to consider the creation of new nuclear weapons that are 'smarter' and more precise . . . I don't think the Russians are going to stand by and allow the Americans to go ahead without responding in kind."

"What they are saying is,'We've always been discussing possibilities of facing this or that scenario, in which we might have to respond in this or that fashion.' The Americans are simply saying that they are prepared to consider all sorts of possibilities."

–Dr. Leslie Green

As fallout to the review, Knight foresees "a new security dilemma" in which non-nuclear states named in the document intensify their efforts to develop nuclear weapons. One of the most significant developments in the arms race, following the collapse of the Soviet Union, was the slowing of so-called horizontal proliferation—the nuclear arming of more and more nations.

"A whole bunch of states decided after the Cold War that it was no longer in their interests (to gain nuclear weapons), and we saw major reductions in nuclear weapons in Russia, former Soviet states and in the U.S.," he said. "The 'Axis of Evil' speech has pushed everything back a decade. I think that kind of hard-line speech by President Bush and this news . . . will push the Iranians in the direction of trying to acquire these weapons as soon as possible. That is not good for global security."

Tom Keating, a political science professor who studies foreign and defence policy, agrees some nations will speed their own nuclear development. But what's worse, he predicts, is that some nations may be more willing to use their nuclear weapons if the U.S. develops more precise warheads.

"They are trying to design weapons that will bridge the gap between conventional weapons and the more destructive weapons," said Keating. "In doing so, they are trying to create weapons that are more useable, and hence more likely to be used. That raises concerns."

If the U.S. were to develop bombs that aren't much more destructive than conventional weapons, "that would be breaking a very significant barrier," he said.

"It could open the door to other actors thinking, 'Well, these weapons are more useable.' There has been a resistance to using them because of their destructive capacity. But a development like that could reduce the inhibition against using nuclear weapons."

Whether terrorist groups represent a nuclear threat is a matter of debate, but given the mindset of suicide bombers and hijackers, Knight says now is not the time for building up arms. Rather, it is more important than ever to disarm.

"The kind of revolutionary terrorist networks we've seen, whose philosophy has more to do with a life after death, aren't necessarily interested in improving conditions on Earth," said Knight. "It would seem it's going to be difficult to keep nuclear weapons out of the hands of these groups."

Knight hopes the international community won't let up in its criticism of the review's contents. The U.S. has been known to bend with popular opinion, he said.

"Let's not forget, this isn't official policy. It is a leaked report. There will be a lot of changes to it before the official version is released, and in the meantime it is important for countries like Canada, which has the capability to produce weapons of mass destruction but has chosen not to, to show some leadership, to tell the Americans that this is only going to lead to proliferation." ■

opinion
guest column

Alberta and the revenue rollercoaster

Province needs stable, predictable spending

By **Dr. Paul Boothe**

As part of her March 19 budget speech, Alberta Finance Minister Pat Nelson announced the formation of a Financial Management Commission headed by Calgary health chair David Tuer.

The broad mandate of the commission is to examine the province's fiscal policies and practices. I hope one of the things on the commission's agenda will be to look at new ways to deal with revenue volatility.

Why should Albertans care about revenue volatility? Last week's budget projected a fall in revenue of almost six per cent and a corresponding decline in program spending of over seven per cent. This follows a revenue decline in fiscal 2001-2002 of almost 18 per cent. In just about any other province in Canada, such volatility would be catastrophic. Unfortunately, Albertans have grown all too familiar with these rollercoaster revenues. With the most volatile revenues in Canada, Alberta has experienced changes of 15 per cent or more five times over the past twenty years.

The next most volatile province, Saskatchewan, has seen changes of this magnitude only twice.

Why are revenues such a problem? Economists have known since the late 1800s that changes in government revenue lead to changes in expenditure. The problem is that spending increases are a lot easier to accommodate than spending reductions. When revenues are fluctuating up and down, a bias in favour of deficits is built into government budgets.

However, volatility causes another equally serious problem. Extreme revenue volatility can reduce the quality of government services. For example, funding fluctuations make it very difficult to plan future health or education services and may lead to disruptions in current services.

As the mayors of Edmonton and Calgary argued forcefully in recent weeks, the problems are even more pronounced when capital investment is involved, such as in building roads and bridges. Over the past 20 years, Alberta has had four annual increases in program spending of more than 10 per cent and six absolute reductions in program spending.

Governments in Alberta and elsewhere have tried to put in place rules to deal with revenue volatility. In fact, Alberta has tried a couple of different approaches. With the Deficit Elimination Act that was in force until budget balances resumed in the mid-1990s, government was only allowed to budget energy revenue to a maximum of 90 per cent of current forecasts.

In government's current Fiscal Responsibility Act, a "cushion" equal to 3.5 per cent of revenue is set aside each year to protect against unexpected declines in revenue that might otherwise push the budget into deficit. With both rules, there have been strict limits on the amount of any unexpected revenue increases that can be spent on programs.

Rather than revenue cushions, Saskatchewan and Manitoba have fiscal stabilization funds that hold target balances equal to five per cent of revenues. These funds can be drawn upon in the event of unexpected revenue declines.

Each of the rules has advantages and disadvantages. In Alberta's case, the rules have been successful in preventing the government from returning to deficit when revenues decline or spending all of a windfall when revenues surge. For example, in 2000-2001 an unexpected surge in energy prices caused Alberta government revenues to skyrocket. By law, only 25 per cent of the unanticipated revenue could be spent and thus Alberta applied over $6 billion to debt repayment. By most standards, this would have to be regarded as a highly successful application of the fiscal rule.

While the Alberta rule works well for revenue fluctuations that occur within a given year, it is less effective when fluctuations last longer. There is nothing in the current rule to prevent a second year of windfall revenue being spent of programs. Albertans already get substantially more services and pay less tax than the average Canadian. Adding additional, unsustainable spending to the current level is neither necessary nor desirable.

Likewise, the Saskatchewan and Manitoba approach also has problems. For example, it can be used when governments want to delay adjustment to a revenue decline rather than just smoothing out its impact on program spending. Thus, current rules do not do a good job of preventing multi-year revenue swings from being translated into disruptive fluctuations in government spending.

A number of groups and individuals in the province have recently put forward ideas on how to better manage volatile revenues. There are other resource-based economies around the world, and their experience may also be helpful. Finding a better way to manage revenue volatility and thus enable stable, predictable spending is critical to the province. It would be a great way for the new Financial Management Commission to contribute to making government work better in Alberta.

(Dr. Paul Boothe is a professor of economics at the University of Alberta and former deputy minister of finance for Saskatchewan. He gives fiscal policy advice to Alberta's and other governments. This article originally appeared in The Edmonton Journal, *March 23, 2002).* ■

New laser surgery is a first in Canada

Revolutionary advance allows patients to go home within hours

By **Geoff McMaster**

A University of Alberta radiologist is using laser surgery to remove a rare type of bone tumour. It is the first time such surgery has been performed in Canada.

Dr. Rob Lambert, a U of A professor of radiology and a radiologist at University Hospital, has treated seven patients, most of them children, with a revolutionary fibre-optic laser procedure that allows them to walk out of the hospital within two hours of surgery.

"The results have been very gratifying," said Lambert. "All seven patients have been mostly or completely free of pain from the tumour within hours, after living with the constant pain, in some cases, for years."

Until now, major orthopedic surgery to remove the tumour and surrounding bone—requiring as much as six months of recovery—had been the only option for those suffering from osteoid osteomas, a benign but chronically painful form of tumour affecting between five and 10 people in northern Alberta per year.

The new laser procedure, used in only three other centres in the world, uses a large-diameter needle, guided by a high-speed CT scanner, to open a path to the surface of the bone. A small hole is drilled into the bone and a thin optic cable, provided by Dr. John Tulip of the U of A Faculty of Engineering, is inserted. The optic cable transmits bursts of infrared light to kill the tumour.

"We have already done this for the treatment of kidney and bladder tumours," said Tulip. "What Dr. Lambert has done is combine the laser light delivery with a technique used to take biopsies. It's modest beginnings, with a small patient base, but very satisfying in the sense they're all young kids who were quite debilitated by the disease…There was one four-year-old who was hopping around and then running up and down the stairs the same day (as the procedure)."

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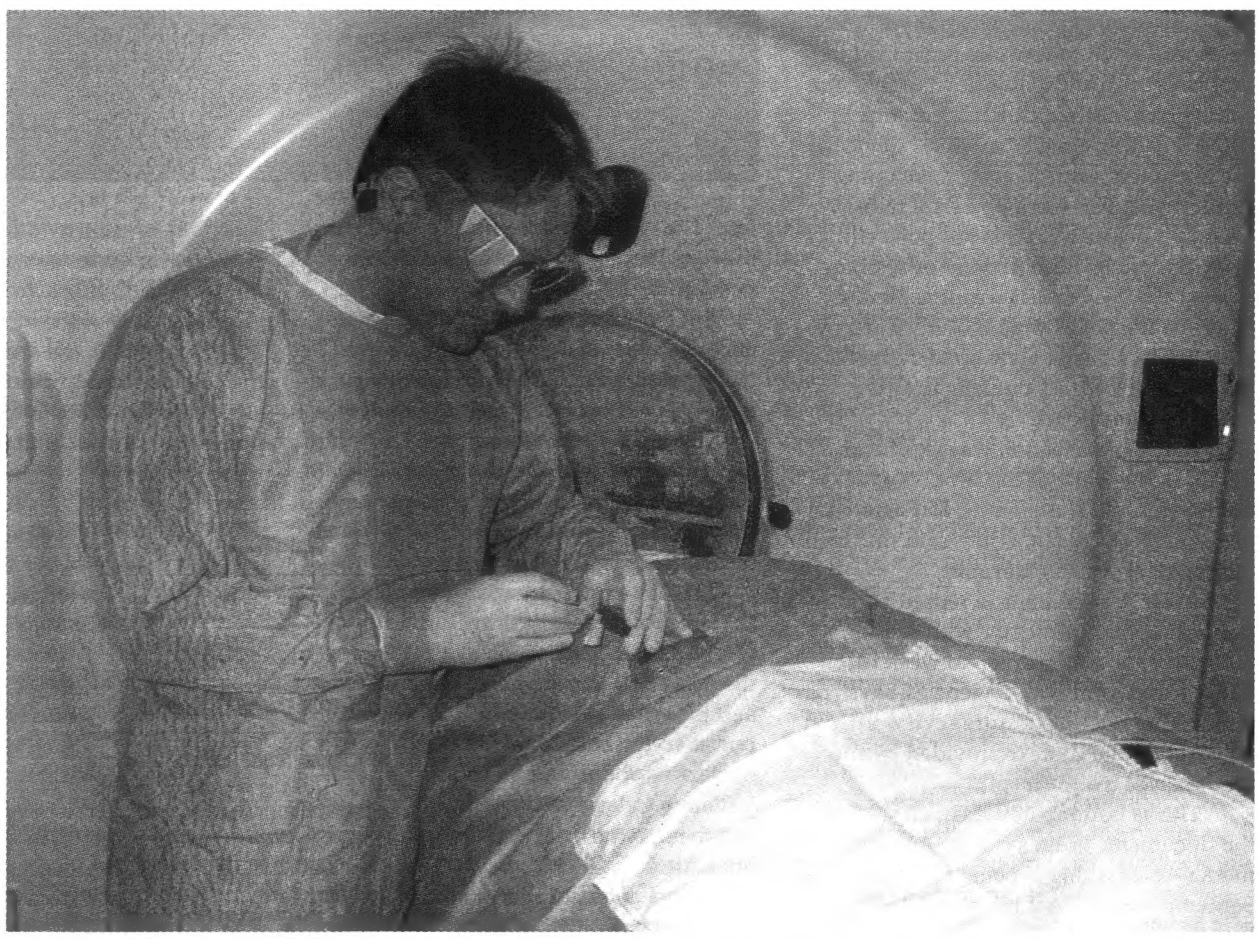
> – Dr. Rob Lambert



Dr. Rob Lambert has begun using a revolutionary fibre-optic laser surgery, dramatically improving patient recovery.

The potential to use the procedure on other kinds of tumours is enormous, says Tulip, because it can, conceivably, be used to go "anywhere in the body." He says researchers at the Cross Cancer Institute will soon use a similar procedure to treat prostate cancer, using "an array of fibres to deal with a bigger volume of tissue." ■

A day in the sun for U of A volunteers

Volunteers gave more than four years of their time in 12 months

By **Geoff McMaster**

When Dr. Andrew Spencer isn't working as director of the Bamfield Marine Station on Vancouver Island, he contributes his time to the Canadian Coast Guard. University of Alberta volunteers were recently honoured through a U of A senate recognition program.

Dr. Andrew Spencer is familiar to many in the university community as the director of the Bamfield Marine Station on the west coast of Vancouver Island. As a U of A professor of biology, he spends his paid time investigating the nervous systems of jellyfish and other organisms at Western Canada's major marine research centre.

But in his off hours Spencer can often be found on a Canadian Coast Guard vessel, looking for someone lost at sea, rescuing people from a capsized boat, or fighting fire aboard a cruise ship. He receives no monetary reward for this work, which he's been doing for the last seven years.

"It's really meaningful work," he said. "The coast guard has been cut back on staffing and they can't man their boats without volunteers."

Spencer has participated in about eight rescue missions off the west coast of Vancouver Island, and "a lot of nasty searches for people in nasty weather, when you find they're actually holed up somewhere."

The sailing aficionado is just one of more than 140 volunteers and groups honoured April 3 at the Timms Centre for the Arts. It was all part of the U of A Senate Community Recognition Program, an initiative launched last year by Chancellor John Ferguson to pay tribute to a part of community life often overlooked.

"We saw that the university was indisputably recognized in teaching and research, but that its links to the community could be strengthened," said Ferguson. "As the role of the senate is to act as a bridge between the university and the community, it was felt that the Community Service Program was a way in which to celebrate those links."

The range of contributions, and the hours put in by legions of individuals and groups on campus, is impressive to say the least. Volunteers, or at least those who went online and registered their work at the senate's Web site, logged a total of 38,503 hours—or 4.4 years—in 2001. They helped inner-city kids learn to read, distributed hampers for the food bank, helped increase accessibility for the disabled, raised funds for the United Way and generally gave freely of their time in a myriad of ways to strengthen the community beyond campus boundaries.

Karen Martin, for example, a doctoral candidate in sociology, attends a support group one day a month for parents who have lost babies to Sudden Infant Death Syndrome (SIDS). As advisor for the Edmonton chapter of the Canadian Foundation for the Study of Infant Deaths (CFSID), she says the work is "the most meaningful thing I do.

> "Parents who come to the group devastated by their baby's death eventually begin to smile again, to feel safe talking about how they feel, and often to risk having another baby. We help marriages stay together in the middle of this horrible crisis."
>
> —Karen Martin

"Parents who come to the group devastated by their baby's death eventually begin to smile again, to feel safe talking about how they feel, and often to risk having another baby," Martin said in a description of her work supplied to the senate office.

"We help marriages stay together in the middle of this horrible crisis."

Martin's master's thesis, funded by CFSID, examined parental reaction to SIDS, investigating the ways parents coped with the loss over time. She interviewed parents who had recently lost babies as well as those who had lost babies as much as 26 years earlier.

She is now about to finish her doctorate on a related topic, examining parental grief and infant death since the Victorian era. However she says the volunteer work, along with teaching, helps her see the relevance of her academic work, getting her "out of books and in front of people who are real," she said. "It's really easy to get lost in books."■

Fungus and ultrasound could lead to new cancer treatment

Unique research limits toxicity

By **Simon Kiss**

Anyone whose life has been touched by cancer knows that chemotherapy treatments can often be worse than the disease itself; treatments can ravage the body, weaken the immune system and poison tissues.

But a new treatment under development at the University of Alberta could spare future cancer patients grueling chemotherapy treatments.

Dr. Gerry Miller of the Noujaim Institute for Pharmaceutical Oncology and Dr. Bill Lown of the Department of Chemistry have developed a way to treat cancer patients using ultrasound and compounds derived from an Asian bamboo fungus.

The two researchers developed the natural compounds—hypocrellins—which are not toxic to the human body and can be administered intravenously to cancer patients.

Targeting ultrasound on the area of a tumour, however, excites the natural, non-toxic compounds to a toxic state. The altered hypocrellins begin to attack the tumour. The major advantage of this technique—called sonodynamic therapy—over traditional chemotherapy is that the latter uses chemicals that are toxic to every tissue in the body. But the treatment Miller and Lown are developing contains toxic elements to the area of the tumour.

"The parent compound is naturally occurring but we modify it to improve its sonodynamic properties," said Miller. "And then we only make the drug toxic where we focus the ultrasound."

Miller got the idea for the treatment 15 years ago after attending a seminar at the University of Alberta by a Japanese researcher who was using sonodynamic therapy, but with other compounds. The idea stuck in the back of Miller's mind until he came across hypocrellins, which Lown had brought back from a visit to China.

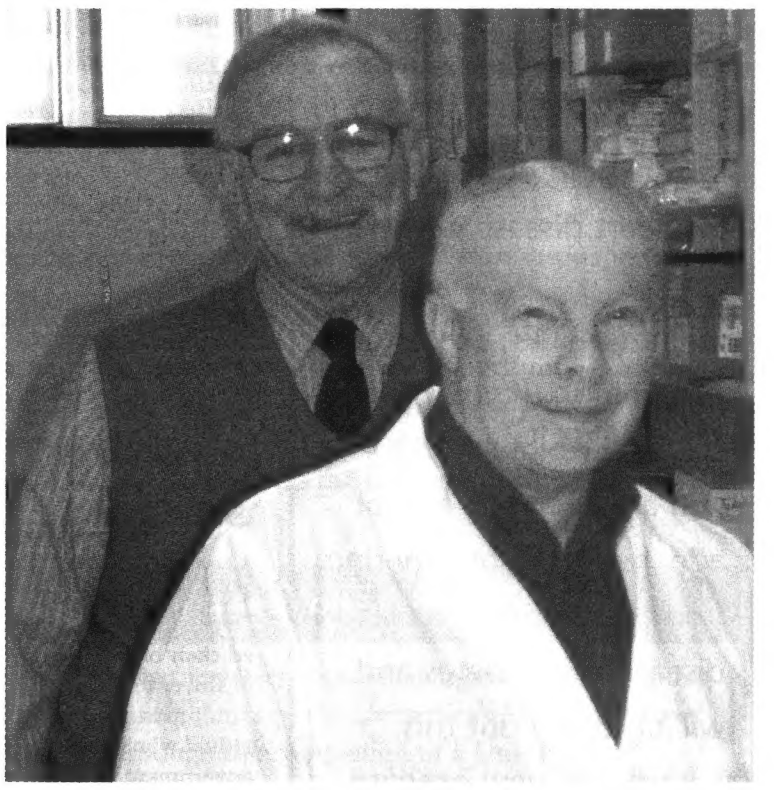
Researchers at the Chinese Academy of Sciences had been using hypocrellins as pigments for photography because the compounds can also be activated with light. This led to the researchers examining the potential for using the compounds in photodynamic therapy, which differs from sonodynamic therapy in that the compounds are activated with light.

That treatment hit a major obstacle when it was discovered that light could only penetrate up to seven mm below the skin. Switching to ultrasound and sonodynamic therapy solved that problem as ultrasound waves can penetrate straight through the body, reaching organs and tissues that light cannot.

"This fungus has been used in Chinese traditional medicine for centuries. Now we're seeing that it could have significant uses for modern cancer treatments," said Miller.

The two unveiled the results of their pre-clinical research at an international symposium March 28 in Japan. "We've been researching these compounds for about 11 years," Miller added.

> "This fungus has been used in Chinese traditional medicine for centuries. Now we're seeing that it could have significant uses for modern cancer treatments."
>
> —Dr. Gerry Miller



Dr. Bill Lown and Dr. Gerry Miller have produced promising results in researching a new cancer treatment.

The research is the only investigation of its kind being conducted in Canada and one of a handful of projects around the world. The U of A researchers have used the technique on mice and on human leukemia cells in cultures where they have successfully induced a delay in tumour growth.

But despite the treatment's potential, Miller stresses that the treatment has not yet reached the clinical trial phase. "This could be used routinely in hospitals three or four years down the line, but not until then," said Miller. ■

It's mostly fun and games

Schaeffer celebrates Canada Research Chair posting

By **Richard Cairney**

Sure computer games are fun, but who knew they could help in DNA sequencing or in emergency medical training? Dr. Jonathan Schaeffer does. The University of Alberta computer science professor has earned a prestigious federal posting as a Canada Research Chair in Artificial Intelligence.

The appointment was announced recently by federal Minister of Industry Allan Rock, minister responsible for Canada Research Chairs, who unveiled a $94.6 million plan to support 88 new Chairs at 33 universities across the country.

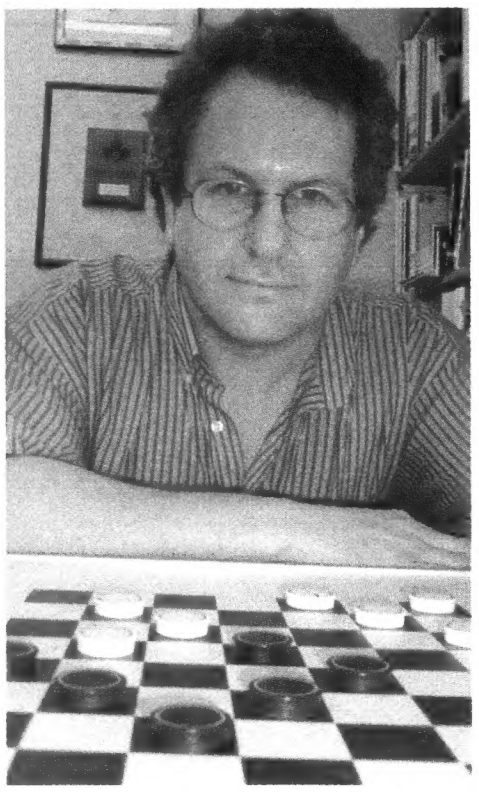
Schaeffer's appointment comes with $1.4 million in funding for five years. And it's pretty prestigious, for a field that isn't often in the spotlight: Schaeffer is currently developing high performance real-time artificial intelligence applications. And he's doing it by playing computer games.

"Working in computer games certainly isn't as sexy as performing medical research or exploring the origins of the universe. But the fact of the matter is it is a $15 billion (US) industry—it's twice as big as the Hollywood movie industry," he said.

Schaeffer began to pursue artificial intelligence programming in games on something of a whim. Passionate about playing chess, he became a chess master—a rank he still holds.

"That is what got me into AI. I thought 'Well, this stuff is easy. I'm going to write a program to play chess.' "

It wasn't that easy. But Schaeffer gained international attention as the inventor of Chinook, the world checkers champion. Chinook is the first computer program to win a human world championship.



Dr. Jonathan Schaeffer's research has its roots in games, but the applications are far-reaching.

One reason for the popularity of computer games today is tremendous improvements in graphics. But gamers want more, said Schaeffer—they want characters in role-playing games to behave realistically, to seem "more human." Accomplishing that will represent a mammoth step forward, considering the complexity of real-time interaction.

"Real time is critical to me. It is what you expect in intelligent behaviour," he said. "I try to make all my applications real time. We want them (characters in games) to respond quickly."

He uses the example of an interview with a reporter to illustrate the point. "You are thinking up all these questions on the fly. I've never heard them before and I'm just rambling on and you're typing away, fast and furious—and as you are doing that, you're thinking up the next question. That is real-time processing.

"If it took me an hour to respond to one of your questions, the experience would be different. And when you start talking about fast responses (from computers) it makes life very difficult. For all the gigahertz we talk about, well, computers are fast but when it comes to processing, these machines aren't human. The human brain has a lot more power."

Such advances will apply to more than computer games. Schaeffer recently attended a conference and met with representatives of a company interested in creating a real-time virtual reality triage centre to train military medical personnel.

"The big picture is that the technology is more important than games or puzzles," he said. "It just happens to be the vehicle I use to demonstrate the research."

Evidence of applying games-oriented research to other fields is the fact that the same computer program used to solve a Rubik's Cube puzzle can be used to sequence DNA. And Schaeffer is a part of a bioinformatics firm that has developed three commercial products to perform precisely that sort of high-level analysis.

Schaeffer is also leading a $40-million interdisciplinary computer project called WestGrid. Serving eight institutions in Alberta and B.C., WestGrid will provide researchers with high-performance computing power.

Where does he find the time for all his work? "I don't know," he said. But sometimes taking his work home can become a family affair. Schaeffer admits to spending time at the controls of a PlayStation with his daughter. "And late at night I'm often still up playing games," he said.

The programs may well apply to other 'more serious' areas of research. But Schaeffer clearly takes pleasure in the fact that these applications originate from games.

"I have the world's greatest job," he said. "I am at an outstanding university working with outstanding people and we attract excellent grad students. I have fun."

Research is serious business. "But the fact that I can couch it as games and that we can play games all day makes it fun. And I am having a blast."

The Canada Research Chairs program is governed by the presidents of the Natural Sciences and Engineering Research Council, the Canadian Institutes for Health Research, the Social Sciences and Humanities Research Council, the Canada Foundation for Innovation as well as the deputy minister of Industry Canada.

"It's wonderful to get national recognition for all the hard work I have put in over the years," Schaeffer said. "It's just nice when somebody says thank you." ■

Feds help cover indirect research costs

U of A earns lion's share of benefits in Alberta

By **Richard Cairney**

The University of Alberta has received an $11.9 million shot in the arm to help cover the indirect costs of research.

Industry Minister Allan Rock and Anne McLellan, Minister of Health and Minister for Alberta, announced the funding recently. Under the plan, six universities and academic institutions in Alberta will share $12 million to help support the indirect costs associated with federally sponsored research.

Universities across the country have wrestled with the issue of indirect research costs for years. As funding for research increases, so do associated costs, such as upkeep of labs and equipment and maintenance of other resources, such as libraries.

Indirect costs of research are often estimated at approximately 40 per cent above the costs of research projects. At the U of A, research funding has skyrocketed during the past several years. So too have the indirect costs of that research. In 2000-2001, indirect research costs at the U of A were estimated at $90.5 million.

Dr. Gary Kachanoski, Vice President (Research) with the U of A, said the one-time federal funding is welcome news.

"It's a terrific first step," said Kachanoski. "They [the federal government] have certainly indicated they are committed to working with universities toward providing this sort of support on a long-term basis, which is what it needs to be."

"Our universities play a pivotal role in encouraging and promoting innovative ideas and research," said Rock. "This investment will ensure Canada's universities and research hospitals can maintain a vibrant research environment and that all Canadians will continue to benefit from new ideas and discoveries from our researchers.

"This investment in our universities is designed to ensure that they can continue to generate the greatest benefits from the federal government's investments in research."

The distribution of funds to individual universities will be based on their past federal research awards from the granting agencies—the Natural Sciences and Engineering Research Council of Canada, the Social Sciences and Humanities Research Council of Canada, and the Canadian Institutes of Health Research. ■

Former EDE boss appointed as board chair

Committed to public service, Jim Edwards returns to his alma mater

By **Ryan Smith**

No moss grows on Jim Edwards. The former president and CEO of Economic Development Edmonton has been appointed chair of the University of Alberta Board of Governors.

"Jim is an innovative and creative individual who has a wealth of experience in government, business and industry," said U of A President Dr. Rod Fraser. "He is well-suited to help the University of Alberta meet our bold vision to be indisputably recognized in teaching, research and community service."

"Mr. Edwards is committed to public service," said Alberta Minister of Learning Dr. Lyle Oberg.

"His experience, leadership and spirit will be an asset to his alma mater—the University of Alberta. I am looking forward to working with him in his new role as board chair."

Edwards' career began in broadcasting and later moved into the public sector. In 1984, he was elected member of Parliament for Edmonton South. During his two terms in Parliament, Edwards sat as a member of the Privy Council and was president of the Treasury Board. Upon his retirement from Parliament he returned to the private sector in financial services. He became president and CEO of Economic Development Edmonton in 1998, a post he held until announcing his resignation earlier this year.

Edwards, who earned a BA at the U of A in 1962, replaces Eric Newell, the chairman and CEO of Syncrude Canada. Newell is stepping down after serving four years as chair.

"Mr. Newell has done an excellent job," Oberg said.

"The university continues to be a world-class research and teaching institution."

"I would like to thank Eric Newell for all his hard work as board chair for the past two terms," added Fraser.

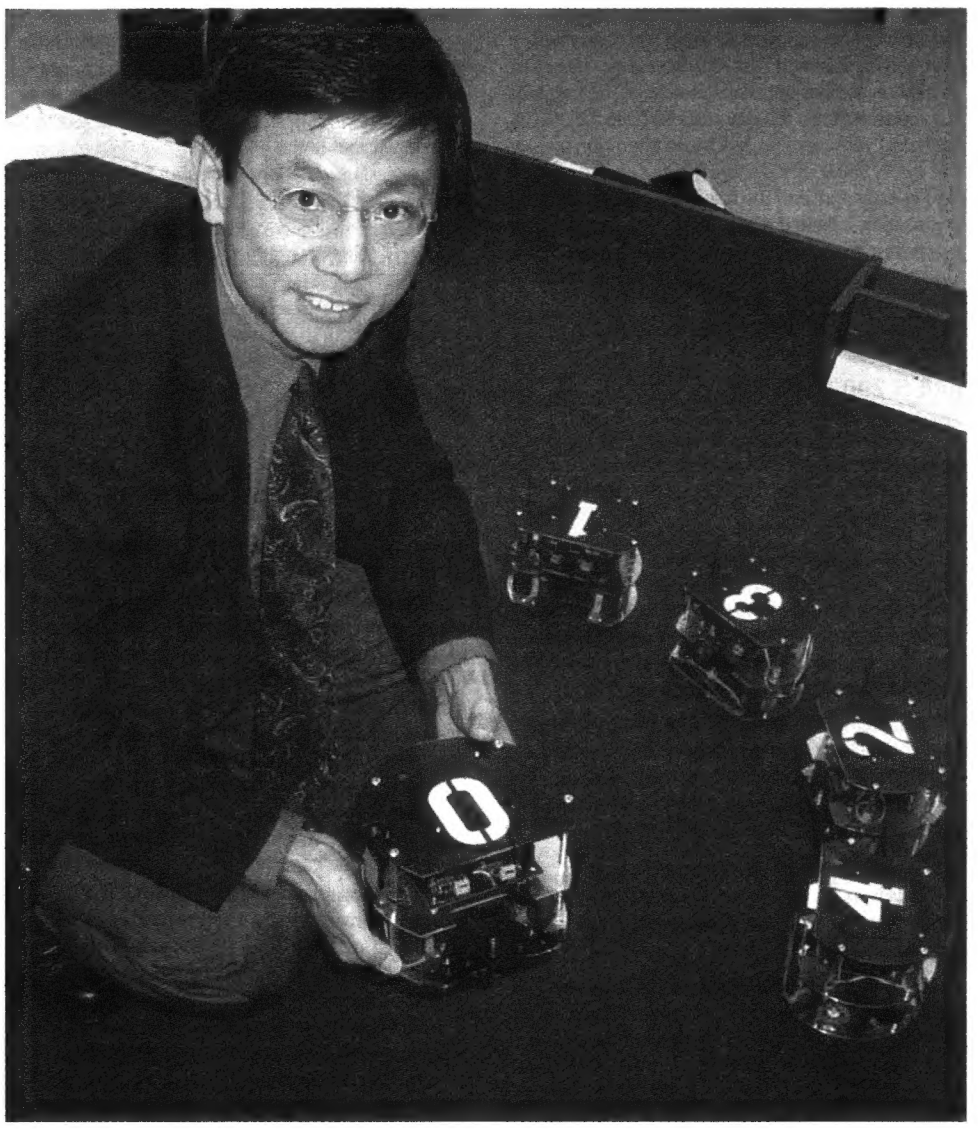
"Eric worked tirelessly while serving as chair and his efforts are very much appreciated. His vision and dedicated support has been a significant catalyst to the successes that the university has achieved under his tenure as board chair."

Fraser added that the U of A also owes a debt of gratitude to vice-chair Lloyd Malin, who stepped in for Newell for the past few months. ■

Could robots lead a mission to Mars?

The efforts of many could be an advantage

By **Stephen Osadetz**



Dr. Hong Zhang's interest in robots varies from the earthbound soccer-playing variety to the interplanetary explorers he envisions being used in future space missions.

Soccer-playing robots could have a big impact on future plans for Mars exploration. While the connection between extraterrestrial discovery and robotic footballers may seem tenuous at best, Dr. Hong Zhang, a University of Alberta professor of computer sciences who studies collective robotics, has developed small robot soccer players that could dramatically change the way the next space probe reaches Mars.

Zhang began to envision the connection when the Pathfinder Space Probe reached Mars in 1997. Instead of a proper landing, Pathfinder underwent a controlled crash-landing. After the craft bounced to a halt on the surface of the planet, the damaged landing apparatus nearly prevented the robot rover, Sojourner, from even leaving the space probe.

"The problem with the last mission was that [Pathfinder] couldn't find a spot to land," says Zhang. He envisions something entirely different. Instead of crash-landing on the planet, the next mission could deploy thousands of less complex, co-operative robots to clear a landing pad. "A single vehicle is very fragile," Zhang continues. "If it's broken, all is lost." Even if many of the robots in a team were damaged or destroyed, Zhang thinks the remaining ones could build an adequate landing pad.

To try to make his idea a reality, Zhang has been exchanging papers with NASA. His vision extends beyond simply clearing a landing pad for the space craft: If, for instance, NASA wanted to build a space station on Mars' surface, 5,000 robots could work together to build that station.

By co-ordinating the robots' memory, sensing, and communicative abilities, Zhang creates robots that possess the minimum skills required to complete a simple task—to play a soccer game, for instance. He hopes his robots will be tested this year at RoboCup, the world championships in robot soccer, if funding for the event comes through. This year's event, which would mark Zhang's second showing, will be held in Japan at the same time as the human soccer world cup.

What makes Zhang's robots important is that they are co-operative. He uses the soccer-playing abilities of his robots as a selling point, a way to make their technology popularly accessible and interesting. It's this collaborative function that both allows the robots to play soccer and makes them potentially useful in space exploration. Fundamentally, their behaviour is modelled on that of ants. Because ants' neural abilities are simplistic, it's relatively easy for Zhang to make his robots behave in a similar fashion. The key is to make them as simple as possible.

Though his soccer-playing robots aren't technically artificially intelligent (they aren't capable of learning), the robots do function independently of human input. "The robots we use are autonomous," said Zhang. "This means they have an on-board computer that controls their actions." Once a RoboCup game is begun, the robots are on their own. They can communicate only with each other, by 'sight' and radio.

The larger goal for Zhang is a simple one. "I like to have fun. Being an academic, I get a lot of freedom. ... I don't have to win a Nobel Prize, but I do want to do things I enjoy—like play soccer, for instance. Now I can build machines that play soccer, just as I do." And now Zhang's research may take the technology he's developed to play soccer to a totally different realm, something much larger than a robot soccer field; his technology may one day be headed for Mars.

Stephen Osadetz is a third-year student and part-time science writer for Folio and ExpressNews. His writing position is funded by NSERC and is part of a program called SPARK, which aims to involve students in the dissemination of research. To suggest story ideas, write Stephen at sosadetz@ualberta.ca. ■

talks & events

Submit talks and events to Cora Doucette by 9 a.m. one week prior to publication. ***Folio Talks and Events listings will no longer accept submissions via fax, mail, e-mail or phone. Please enter events you'd like to appear in Folio and on ExpressNews at: ttp://www.expressnews.ualberta.ca/ualberta/L2.cfm?c=10***

APR 01 - OCT 31 2002

Standard First Aid/Heartsaver Courses. The Office of Environmental Health and Safety has arranged for Standard First Aid/Heartsaver courses to be held on campus once again this year. The training is comprised of two full-day sessions (8:00 a.m. to 4:00 p.m.) with morning, lunch and afternoon breaks. The cost is $80.00 per person. The first course will be held in early April and the last at the end of October. Registration is limited due to classroom size. For further information and registration forms please call Cindy Ferris at 492-1810 or e-mail cindy.ferris@ualberta.ca or visit the home page at http://www.ehs.ualberta.ca/training.htm#CPR

APR 5 2002

Computing Science Department. Speaker Jerry R. Hobbs presents "Knowledge-Based Discourse Understanding." Room 3-33 Computing Science Centre. Noon.

Department of Biological Sciences. Ecology Seminar Series (part of the Biology 631 Seminar Series). Dave Schindler and Cynthia Zutter, "A paleoecological reconstruction of the fire history of Jasper National Park." BS M-149, Biological Sciences Building. 12:00 noon.

Medical Microbiology and Immunology. MMI 601 Student Seminars, Medical Microbiology and Immunology, present "Sweet DREAM: a release from pain" with speaker Kerry Lavender. From 12:00 p.m. to 1:00 p.m. Classroom F (2J4.02 WMC).

Department of History and Classics Colloquium. Richard Bulliet, Columbia University, speaking on "Islam's Crisis of Authority." Location: Humanities Centre, L2. 2:00 p.m.

Department of Philosophy, Philosophy Colloquium. Martin Tweedale, Department of Philosophy, U of A, speaking on "Future Contingents Revisited." Room 4-29 Humanities Centre. 3:00 p.m.

Regulation of potassium channels and heart function. Hosted by Department of Physiology & CIHR Membrane Protein Research Group. Dr. William Cole, University of Calgary. 3:00 p.m. in Room 207 HMRC.

Earth & Atmospheric Sciences. Atlas Seminar. Karsten Michael from the Alberta Geological Survey will present 'subsurface fluid flow in the vicinity of the Rocky Mountains'. For more information, please contact Jeff Lonnee at 492-9237, or email: jlonnee@ualberta.ca. Time 3:00 - 4:00 p.m. Location: Tory 3-36.

Department of Physics Colloquium. Dr. Eric Braaten, Department of Physics, The Ohio State University, presents "Effective Theories from QED to Cold Atoms." 3:15 p.m. Room V-129 Physics Building.

Department of Biological Sciences. Molecular Biology and Genetics Research Group (part of the Genetics 605 seminar series). Ian MacDonald, "Macular degeneration: From gene to clinical trial." Room M 149 Biological Sciences Building. 4:00 p.m.

Department of Biological Sciences. Departmental Seminar Series. Chris J. Secombes, DSc, FIBiol, Scottish Fish Immunology Research Centre, University of Aberdeen, presents "Cytokine Expression, Innate Immunity and Disease Resistance in Fish." Sponsored by AHFMR, hosted by Dr. Mike Belosevic. From 4:00 to 5:00 p.m. in Room V 120, Physics V-Wing.

Department of Music. Music at Convocation Hall, William Street, saxophone, Roger Admiral, piano, with The Edmonton Saxophone Quartet: William H Street, soprano saxophone; Charles Stolte, alto saxophone; Kristofer Covlin, tenor saxophone; Jeff Anderson, baritone saxophone. Program will include works by Piet Swerts, Shih-Hui Chen, Patrick Cardy, William Albright, Henri Pousseur, Klaus de Vries, and Gavin Bryars. All concerts and events are subject to change without notice. Please call 492-0601 to confirm concert information. Admission: $7/student/senior, $12/adult. 8:00 p.m.

MAR 06 - APR 07 2002

Dept. of Human Ecology. Exhibit "Fragile Threads" Without their owners, these textiles have quite a story to tell! In this exhibit, examples from the last century show how textile conservation not only keeps these artifacts in shape, but preserves our link with the past. "Fragile Threads: A look at the conservation of historic textiles" is on display until April 7 in the Main Floor Gallery of the Human Ecology Building.

MAR 28 - APR 06 2002

Under Milk Wood. Studio Theatre presents Dylan Thomas' Under Milk Wood. This poetic tapestry of scenes of people in a small Welsh town may be harsh or humorous, reflecting the emotions and experiences in our own lives. Happens at the Timms Centre on campus. All performances begin at 8:00 p.m. with matinee on Thursday at 12:30 p.m. For further information, please call the Box Office at 492-2495.

MAR 26 - APR 07 2002

Department of Art and Design. Art is Activism is an exhibition of contemporary anarchist art from Canada, the United States and Europe. Videos, prints, posters, paintings, journals, photographs, and books augmented by artistic documentation of protest, gathering and other events. The exhibition showcases an underground culture of revolt infused with the vibrancy of creative dissidence. Activism is art - and art is activism. Curated by Allan Antliff. Fine Arts Building Gallery. Tuesday to Sunday: 10:00 a.m. to 5:00 p.m. For further information, please contact Blair Brennan at 492-3261.

APR 04 - 05 2002

Faculté Saint-Jean. Canadian Studies, Globalization and Theories of Nationalism. 4th conference of the Louis Desrochers Lecture Series in Canadian Studies. The lecture is on April 4 at 7:30 p.m. (French with 20% English). The seminar (in English) on April 5 at 1:00 p.m. Location: Centre Saint-Jean, Faculté Saint-Jean.

APR 06 2002

Open Wide 2002. Open Wide is a one-day, free dental clinic sponsored by the Department of Dentistry at the University of Alberta. The patients are booked beforehand by the Capital Health Public Health Clinics, carefully screened to ensure that the people booked are really in need of care and would have a difficult time affording the treatment. The day begins at 7:00 a.m. and will end at approximately 3:30 p.m. Doing the treatment will be approximately 30 dentists, 15 dental hygienists, plus 60 dental students and 40 dental hygiene students. Dentistry-Pharmacy Building.

Year End Gala. A semi-formal evening of ballroom dancing with a lesson, performances and a buffet for $7. You can call in advance to reserve your ticket or purchase it at the door. Location: Danceland, 2nd Floor, 9645 - 102 Avenue. Time: 7:00 p.m. to 1:00 a.m. For further information, please contact Dawn or Matthew, 435-9985.

Department of Music. Master of Music Recital. Liana Bob, choral conducting with The University of Alberta Jazz Choir Happnin. Program will include works by Raminsh, Haydn, Weelkes and Mendelssohn. Free admission. 8:00 p.m.

APR 7 2002

Department of Music. The University of Alberta Concert Band Concert. William H Street, Director. Program will include works by Stamp, German, Daehn, Haydn, Sousa, Knox, Holst and Iannaccone. 3:00 p.m.

Department of Music. The University of Alberta University Symphony Orchestra, Madrigal Singers and Concert Choir, Malcolm Forsyth, Conductor. Program will feature works by Forsyth, Poulenc, Verdi and Stravinsky. Soloist: Andrew Wan, violin in the Vieuxtemps Concerto No. 5. Francis Winspear Centre for Music. Admission: $15/adult, $10/student/senior. 8:00 p.m.

APR 8 2002

Department of Music. Music at Noon,

Convocation Hall Student Recital Series featuring students from the Department of Music. Free Admission 12:10 p.m.

Department of Music. Master of Music Recital. Julie Amundsem, cello. Free admission. 8:00 p.m.

Department of Music. Grant MacEwan College and University of Alberta Jazz Bands Concert. Ray Baril and Tom Dust Salute to the Bands: A Tribute to the Great Swing Bands of the 1930s and 1940s. John L Haar Theatre, Jasper Campus, Grant MacEwan College. Admission: $10/adult, $8/student/senior. For more information, please call 497-4436. 8:00 p.m.

APR 09 2002

Department of Biological Sciences. Seminar Series: Thesis PhD. Speaker: Christopher Todd, presents "Developmental Regulation of Arginase in Loblolly Pine (Pinus taeda L.) Seeds During Germination and Early Seedling Growth." 12:30 p.m. M 141 Biological Sciences Bldg.

The Roots of Dentistry: Tools for Teeth. Learn about the rise of the dental profession from its medieval "barber-surgeon" origins to its identification as a separate profession with the establishment of a university education. Presented by Dr. Sperber, Professor Emeritus, Faculty of Medicine and Dentistry. From 7:00 to 9:00 p.m. in Room 4069 Dentistry-Pharmacy Centre.

Department of Music. New Music Concert featuring works by Student Composers. Free admission. 8:00 p.m.

APR 10 2002

Registration Workshop. Please join us to learn all there is to know about registering in classes for this upcoming fall. We will have program advisors available to help you select appropriate courses for your first year and to assist you in assembling your timetable. Telephone registration will open to students in early April, so this workshop will prove helpful for that process. Happen at 7:00 to 8:30 p.m. in Tory Building Atrium.

APR 11 2002

Department of Biological Sciences. Series: Aquatics. Speaker: Agnes S. Wong. Title: "Fire residuals in the boreal forest: vegetation structure, species composition and local topography." 8:00 a.m. CW 313 Biological Sciences Bldg.

Lunch & Learn. Event sponsored by Health Promotion & WorkLife Services.
"Work/Life Balance - Part 2 Tips and Techniques for Achieving Balance." From 12:00 p.m. to 1:00 p.m. Presenter: Charlene Weiss, H.J. McLeod & Associates. This session will look at life balance pressure points, approaches for setting limits and boundaries, saying "no" without guilt, and discuss other strategies to help you to achieve a personal balance in your life. Location: Heritage Lounge, Athabasca Hall.

Department of Biological Sciences. Dr. Robert A. Steiner, Department of Physiology and Biophysics, School of Medicine, University of Washington, Seattle presents "Molecular Motifs Coupling Adiposity, Metabolism and Reproduction." Hosted by Drs. John Chang and Greg Goss, this event is sponsored by AHFMR. From 3:00 p.m. to 4:00 p.m. Room V 120, Physics V-Wing.

Department of History and Classics. Francis Landy, University of Alberta, speaking on "Rabbi Isaac the Blind's Commentary on the Book of Creation." Room 2-58 Tory Building. 3:30 p.m.

Department of Renewable Resources. Forest Industry Lecture Series. Dr. Charles Kay, Wildlife Ecologist, Assistant Adjunct Professor from the Political Science Department at Utah State University will present, "Aboriginal Influences and the Original State of Nature." Room P-126 (Physics Laboratory). From 3:00 to 5:00 p.m.

APR 12 2002

Department of Biological Sciences. Ecology Seminar Series (part of the Biology 631 Seminar Series). Andrew McAdam, "The Nature of Nurture: Evolution by Maternal Effects in a Natural Population of Red Squirrels." BS M-149, Biological Sciences Building. 12:00 noon.

Department of Accounting & MIS. Visiting Speaker Workshop, David Larcker, University of Pennsylvania, will be presenting his paper titled, "Implementing Subjectivity in a Reward System: Evidence from a Balanced Scorecard".
Room 4-16 Business Building. From 3:30-5:00 p.m.

Department of Physiology. Dr. Sandra T. Davidge, Department of Physiology, University of Alberta, presents: "Novel role of estrogen on aging vasculature" at 3:00 p.m. in 207 Heritage Medical Research Centre.

APR 13 2002

Philosophers' Café: an opportunity for the public to engage in informal, lively conversation about philosophical or topical issues. Nina's Restaurant, 10139 - 124 Street. From 2:00 to 3:30 p.m. Topic: "Democratic Deficit? Assessing the Quality of Canadian Democracy." Guest Scholar: Steve Patten, Professor of Political Science Moderator: Bernard Linsky, Chair of Philosophy. Free admission.

APR 14 2002

Department of Music. Master of Music Recital. Sonya Eagles, soprano. Free admission. 2:00 p.m.

APR 15 2002

Department of Chemistry. The 2002 Merck Frosst Lecture. Professor Chaitan Khosla, Department of Chemical Engineering and Departments of Chemistry and Biochemistry (by courtesy), Stanford University, Stanford, California, will speak on: "Natural Product Biosynthetic Engineering." 11:00 a.m. Room V-107 Physics Wing.

APR 16 2002

Lunch & Learn. Event sponsored by Health Promotion & WorkLife Services. "Parenting your Anxious Children." From 12:00 p.m. to 1:00 p.m. Presenter: Wes Miller, Centre for Cognitive Behavioral Therapy. Anxiety disorders are one of the primary mental health problems affecting children and adolescents today. Given the wide range of stressors associated with growing up, it is important that our children have appropriate skills for coping with anxiety and other difficult emotions. Please join us for this session to discuss ways how anxiety affects our children and what we can do to help. Location: Heritage Lounge, Athabasca Hall.

APR 17 2002

iCORE Distinguished Lecturer Series. Live by videolink (University of Alberta Telus Centre, Room 134), Dr. Jonathan Schaeffer will present, The games computers (and people) play. LIVE LOCATION: Biosciences 587, University of Calgary. Happens at 4 p.m. Admission is free. Everyone welcome. This presentation will also be Web cast and available for desktop viewing within 24 hours of live presentation at http://www.icore.ca.

APR 17 - 19 2002

Department of Psychology. The Department of Psychology presents the 27th Annual Distinguished Scholar Lecture Series, a series of three lectures by distinguished guest Dr Mark Snyder from the University of Minnesota, at 4:00 p.m. on 17, 18, & 19 April 2002. Location: CW410 Biological Sciences Building.

APR 19 2002

Career and Placement Services (CaPS). Workshop "Establishing a Career Outside of Academia" - new for graduate students! Workshop fees range from just $10 to $20. Pre-register at CaPS, 2-100 Students' Union Building (SUB). For a complete listing of upcoming events, check out Web site at www.ualberta.ca/caps. Room 4-02 Students' Union Building. From noon to 2:00 p.m.

Department of Biological Sciences. Genetics 605 Seminar Series. Molecular Biology and Genetics Research Group. Dr. Johannes Herrmann, Adolf-Butenandt Institute for Physiological Chemistry, Ludwig Maximilians University of Munich, Germany, presents: "Sorting in and out mitochondrial inner membrane proteins: OXA translocase of mitochondria." 4:00 p.m. M-149, Biological Sciences Building

John Dossetor Health Ethics Centre Health Ethics Seminar. "Capacity Assessment: Philosophical Reflections on an Inexact Science." Presenters: Ingra Schellenberg, Clinical Ethics Resident, Royal Alexandra Hospital, Ph.D.(Candidate), University of North Carolina at Chapel Hill and Gary Goldsand, Clinical Ethicist, Royal Alexandra Hospital, Ph.D.(Candidate), University of Toronto. From 12:00 noon to 1:00 p.m. Room 207, Heritage Medical Research Centre.

APR 21 2002

Department of Music. The University of Alberta Madrigal Singers Pre-Tour Concert Ardelle Ries, Conductor with special guests Happnin: The University of Alberta Jazz Choir. Liana Bob, Conductor. Music from and inspired by Shakespeare's time. 8:00 p.m.

positions

The records arising from this competition will be managed in accordance with provisions of the Alberta Freedom of Information and Protection of Privacy Act (FOIPP). The University of Alberta hires on the basis of merit. We are committed to the principle of equity of employment. We welcome diversity and encourage applications from all qualified women and men, including persons with disabilities, members of visible minorities, and Aboriginal persons.

FACULTY SERVICE OFFICER
ELECTRICAL AND COMPUTER ENGINEERING

The Department of Electrical and Computer Engineering is seeking one full-time faculty service officer (FSO). The department currently has 44 faculty members and will be expanding to 53 over the next two years. Two new buildings, including a full microfabrication facility, serve teaching and research needs of the department. Information regarding department programs, faculty and facilities can be found at http://www.ee.ualberta.ca. Candidates must have earned a M.Sc. or Ph.D. and have a strong commitment to teaching.

In general the FSO is responsible for:

Lecture and laboratory delivery in the existing undergraduate program. Particular needs exist in Computer programming (C/C++)

Course content development (lectures, web materials, exams and assignments)

Course delivery and laboratory coordination, including supervision and training of teaching assistants, maintenance of web sites, newsgroups, tutorials and student advice.

It is anticipated that the FSO will participate in a meaningful way in research projects within the department.

Starting Date: Fall, 2002

Application Details:

Applicants are invited to submit their curriculum vitae including employment history, a statement concerning research and teaching interests and the names of at least three referees to:

Dr. W. Pedrycz
Chair, Department of Electrical and Computer Engineering
The University of Alberta
Edmonton, Alberta, Canada, T6G 2V4
Deadline: April 30, 2002.

INSTRUCTORS
ENGLISH LANGUAGE PROGRAM

The English Language Program invites applications for ESL and EAP (English for Academic Purposes) instructors. The successful candidates will teach short-term ESL courses or advanced-level EAP courses.

The minimum qualifications are a university degree including training in TESL and a native-like command of English.

Applications should be received by Thursday April 25. A letter of application, accompanied by a résumé of qualifications and experience and names of three references, should be forwarded to:

The Director, English Language Program
Faculty of Extension
University of Alberta
8303 – 112 Street
Edmonton, Alberta T6G 2T4

folio letters to the editor

Folio welcomes letters to the editor. Send your thoughts and opinions via e-mail to richard.cairney@ualberta.ca, fax at 492-2997, or by mail to Folio, Office of Public Affairs, 6th floor General Services Building, Edmonton, Alberta T6G 2H1. Letters may be edited for grammar, style, accuracy and length.

notices

Please send notices attention Folio, 6th floor General Services Building, University of Alberta, T6G 2H1 or e-mail public.affairs@ualberta.ca. Notices should be received by 3 p.m. one week prior to publication.

EFF-FSIDA (FUND FOR SUPPORT OF INTERNATIONAL DEVELOPMENT ACTIVITIES)

Application Deadline

The deadline for receipt of applications to the EFF-FSIDA is 4:30 PM, 15 April 2002. The next competition deadline dates are 15 October 2002 and 15 January 2003.

This Fund exists to enable staff and graduate students (normally PhD candidates) of the University of Alberta to participate in research and in the international transfer of knowledge and expertise through partnerships in developing countries.

Applications and guidelines are available on the University of Alberta International website <www.international.ualberta.ca> under "Overseas Projects and Programs" or from the FSIDA Secretary at University of Alberta International, 1204 College Plaza, 8215-112 Street, phone 492-3094.

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DEVON ACREAGE, SPECTACULAR EXECUTIVE BUNGALOW, 2,500 sq ft., two bedrooms, two fireplaces, 2.5 baths. Country kitchen, sunroom. April 8, 2002 possession. $2,200/month. Call Janet Fraser, Gordon W.R. King and Associates Real Estate, 441-6441.

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MISCELLANEOUS

THE AMA HAS TWO CHALLENGING OPENINGS in the Advocacy and Community Services Department for its public policy development team. This team deals with a broad spectrum of issues relating to vehicle and road safety, transportation planning, taxation, consumer protection and the environment. POLICY ANALYST: Qualifications include a degree in Political Science, Economics, Public Policy, Public Sector Management or a related field, plus a three-five years related experience, strong data analysis and interpretation skills, excellent verbal and written communication skills, an understanding of government organization and practice and the ability to synthesize complex information and identify policy options. Responsibilities include reviewing and interpreting proposed legislation and new research, and drafting of policy briefs and presentations. RESEARCHER: Familiarity with transportation planning and safety, injury prevention, social sciences or marketing research would be a definite asset. Excellent data analysis and report writing, problem definition and project management skills are essential. Preference will be given to applicants with a Masters degree, including course work with statistical analysis. Salary commensurate with experience plus full benefits package. Please submit your résumé by April 10, 2002, to: R. Taylor, Vice President, Advocacy and Community Services, Alberta Motor Association, P.O. Box 8180, Station South, Edmonton, Alberta, T6H 5X9, or e-mail: rtaylor@ama.ab.ca We thank all applicants for their interest, however, only those selected for interview will be contacted.

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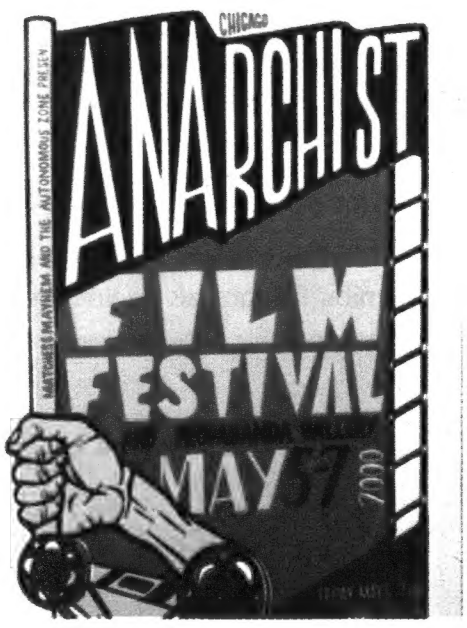
art is ACTIVISM

Gallery presents the art of protest

By **Geoff McMaster**

A DEFINITION OF ANARCHISM

Anarchism came into being in the 19th century as a response to the social, economic, and ecological injustices of the capitalist system and its governing institutions. Present-day anarchists seek a non-exploitive economic and social order founded on individual freedom, social egalitarianism, and ecological harmony. To learn more about contemporary anarchism, consult these Web sites: www.infoshop.org and www.ainfos.ca



The FAB Gallery hosts *Art is Activism*, a collection of protest art. A poster promotes the Anarchist Film Festival (above); works by American artist Susan Simensky (upper and middle right) comment on a regimented education system; and a poster celebrates the life of guerilla leader Nestor Makheno.

The image is powerful and disturbing. Outgoing Ontario Premier Mike Harris is on his knees, a woman with child—strikingly reminiscent of high Renaissance depictions of Madonna and child—pointing an accusing finger at him while another woman points a gun at his head.

The canvass, the work of anarchist and teacher Paul James, is entitled *Retribution*, a pay-back scenario for the "Common Sense Revolution" that caused hardship for so many in Ontario during the 1990s. It's one of the stand-out pieces in *Art is Activism*, an exhibit of contemporary anarchist art from Canada, the United States and Europe, curated by Dr. Allan Antliff of the Department of Art and Design and running until Sunday (April 7) in the Fine Arts Building Gallery.

As an introductory plaque tells viewers, the exhibition "showcases an underground culture of revolt infused with the vibrancy of creative dissidence." It includes a wide variety of media—including videos, prints, posters, sculptures, paintings, journals, photographs, books, even puppets—to reflect the global culture of resistance.

"I've been aware of all this stuff for a long time, but I've also been aware most people aren't aware of it, so I thought it would be a good idea to put a show together," said Antliff, explaining that the collection is an extension of his book published last year, *Anarchist Modernism: Art, Politics and the First American Avant-Garde*.

"One of the things I wanted to break down was the separation between high and low, to demonstrate how art is a function that goes both ways." He points out, for instance, that there are artists featured who create fine art as well as those who create popular art for mass consumption in magazines and newspapers—some do both.

Retribution, which hung in various public places during the last Ontario election, hence its battered condition, is a perfect illustration of the high/low dichotomy. "There is a deliberate, if rough, attempt to imitate high-Renaissance art," said Antliff. "But at the same time there is graffiti all over the work. [James] alludes to the idea that high art can express the outrage he feels politically, but at the same time, it's layered with low art."

The messages to be found in *Art is Activism* are "as varied as the artists themselves," expressing outrage, aiming to educate and above all calling viewers to action. Some works document the recent protests in Seattle, Quebec City and Washington against the new world order of transnational corporate power. Some take aim more generally at the oppressive barriers of capitalism, patriarchy and racism.

But what all have in common is not just a concern with politics, but also a devotion to aesthetic quality of art. While produced by artists who are all self-acknowledged 'anarchists' the art has value "in and of itself," Antliff said.

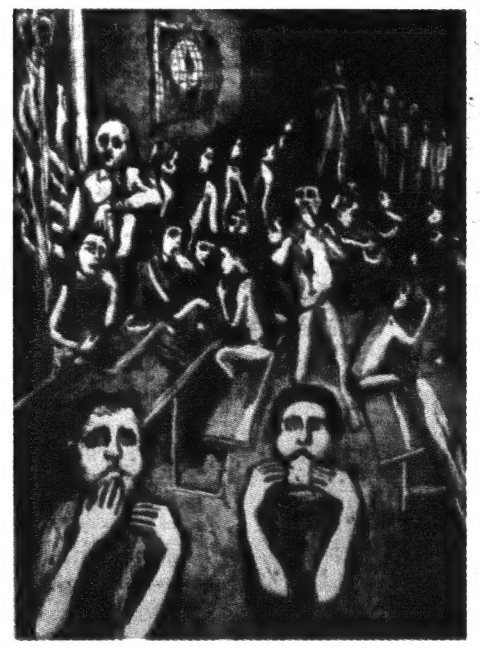
One of the most visually stunning works, a series of prints called *Factory Capitalism*, is by American artist Susan Simensky. The concept behind the series is rooted in anxiety attacks suffered by her two young sons while they were attending school in Milwaukee. When Simensky investigated the cause of these attacks, she found the school was based on a strict behaviourist model according to which each moment of the school day was timed by the teacher.

And so in the first image of *Factory Capitalism*, a child tries to gobble down lunch while a teacher stands over him with a clock. "The presentation of the school is like a prison," said Antliff. "Then we move into the metaphorical dimension, very sickly colours, and the children are in a mill." They are churned through the system as if on an assembly line, the figure of death waiting at the threshold between the school and the factory of adult life.

"It's about the function of a regimented organization training children up to enter the industrial capitalist economic system," said Antliff.

It's probably the most overtly political show FAB has ever seen, as true a representation of the genre as you're likely to see anywhere. Antliff says he's made no attempt to censor what might be considered too edgy by some. But above all he wants viewers to see beyond the contemporary stereotype of the reckless protester clad in black.

"If nothing else, I'd like people to walk away from this exhibition with a better sense of the sophistication of the people participating in those protests," he said. "I'd also like them to grasp the idea of a political continuum that goes beyond the protests to the everyday life of the protesters and the culture they emerge out of."■



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